FIG. 1

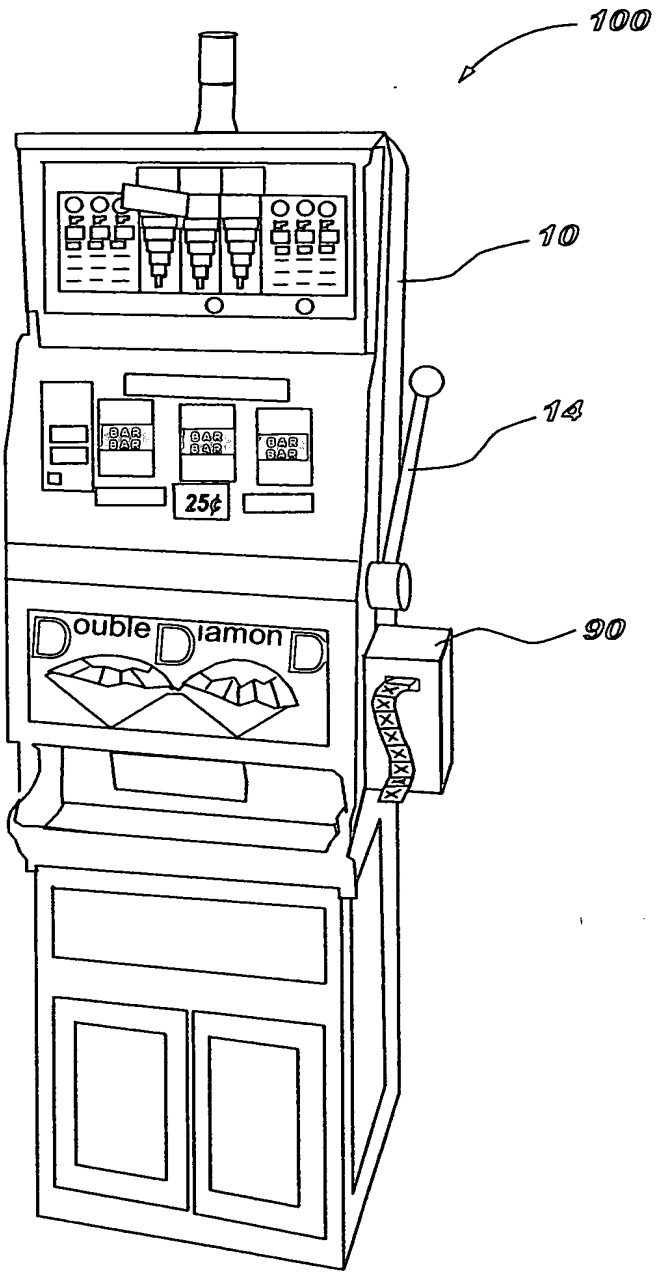


FIG. 2

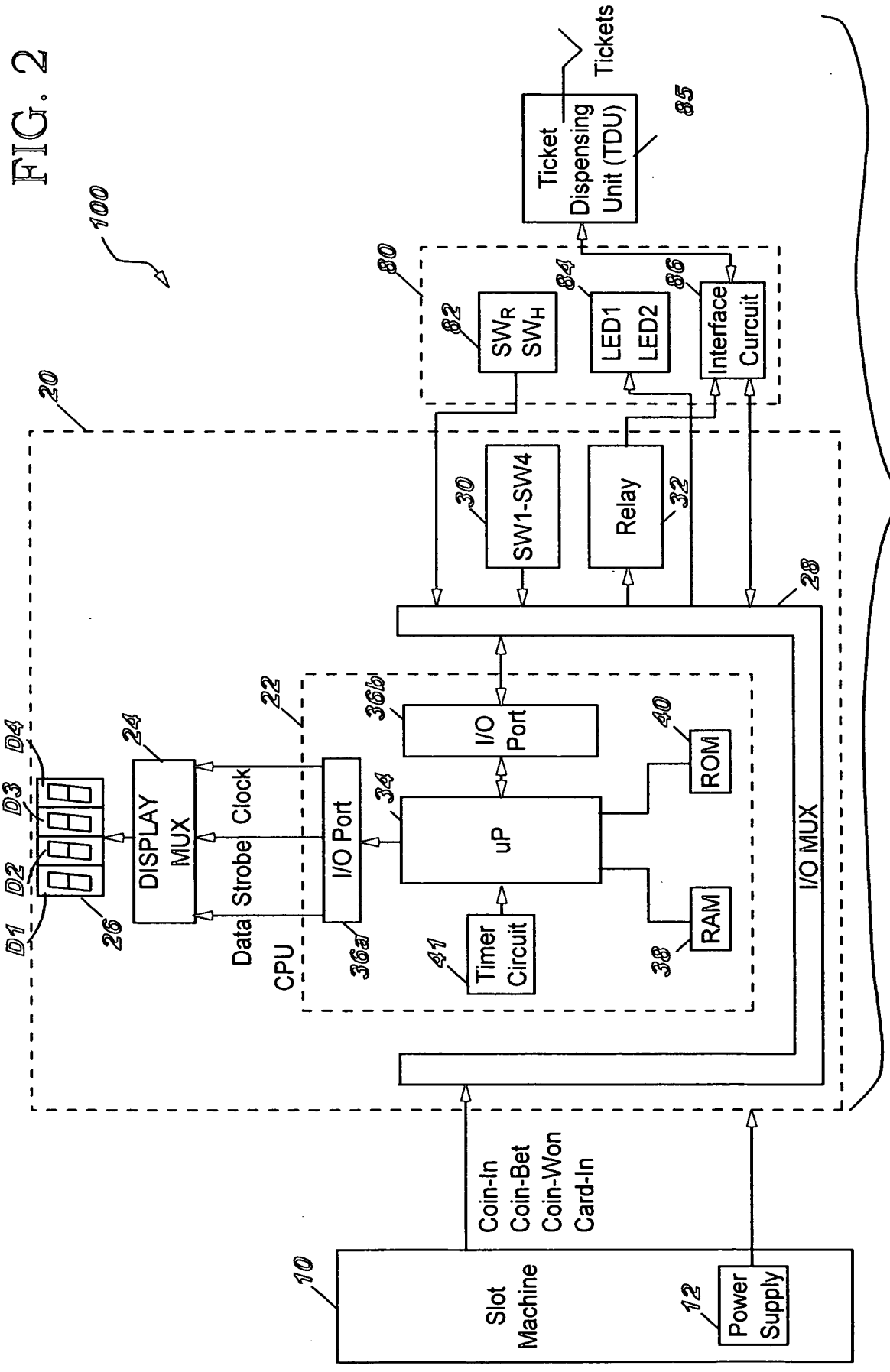

100
Slot Machine
10
Power Supply
12
Coin-In
Coin-Bet
Coin-Won
Card-In
I/O MUX
28
90 (Ticket Dispenser)
20
CPU
22
I/O Port
36a
I/O Port
36b
uP
34
ROM
40
RAM
38
Timer Circuit
41
DISPLAY MUX
24
Clock
Strobe
Data
D1
D2
D3
D4
26
SW1-SW4
30
Relay
32
80
SW$_R$ SW$_H$
82
LED1 LED2
84
Interface Curcuit
86
Ticket Dispensing Unit (TDU)
85
Tickets

FIG. 3

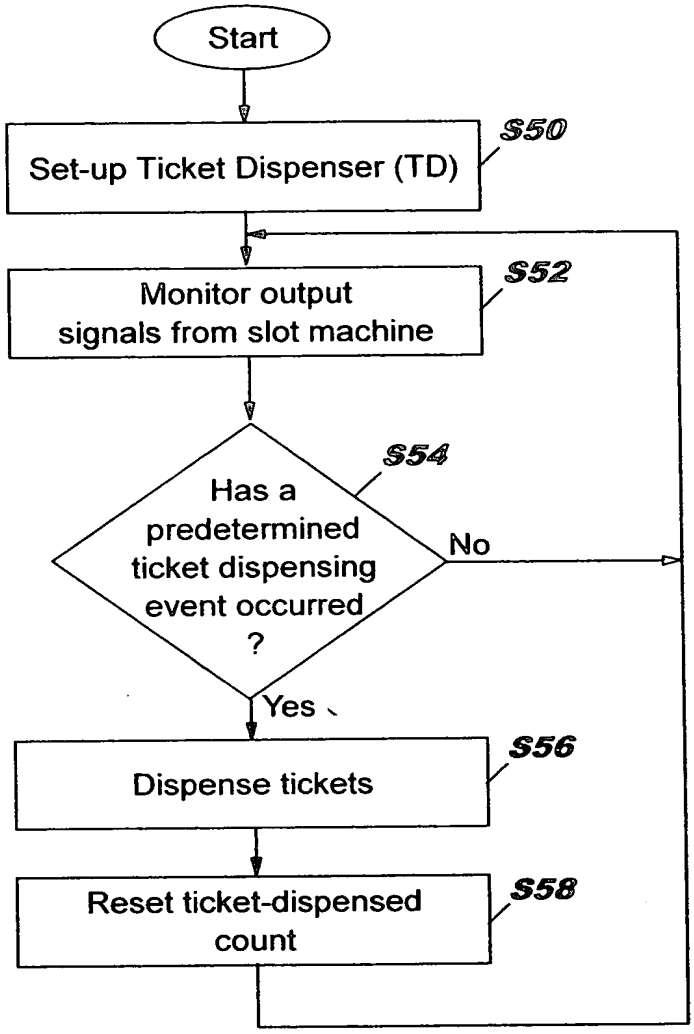

Start
Set-up Ticket Dispenser (TD)
S50
Monitor output signals from slot machine
S52
Has a predetermined ticket dispensing event occurred ?
S54
No
Yes
Dispense tickets
S56
Reset ticket-dispensed count
S58

FIG. 4

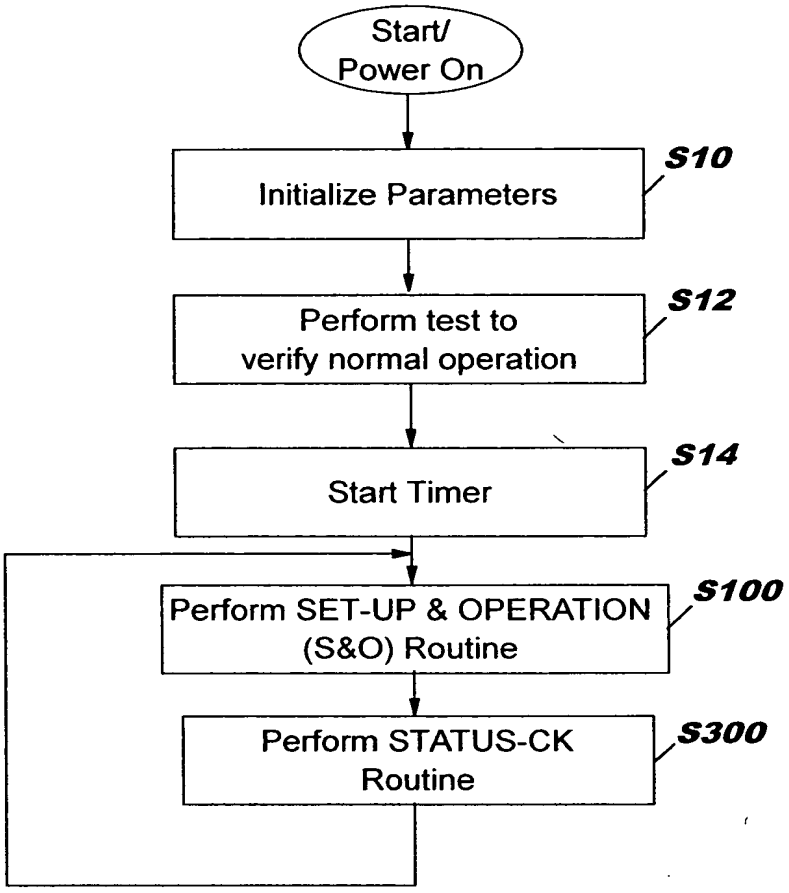

Start/
Power On
Initialize Parameters
S10
Perform test to
verify normal operation
S12
Start Timer
S14
Perform SET-UP & OPERATION
(S&O) Routine
S100
Perform STATUS-CK
Routine
S300

FIG. 5

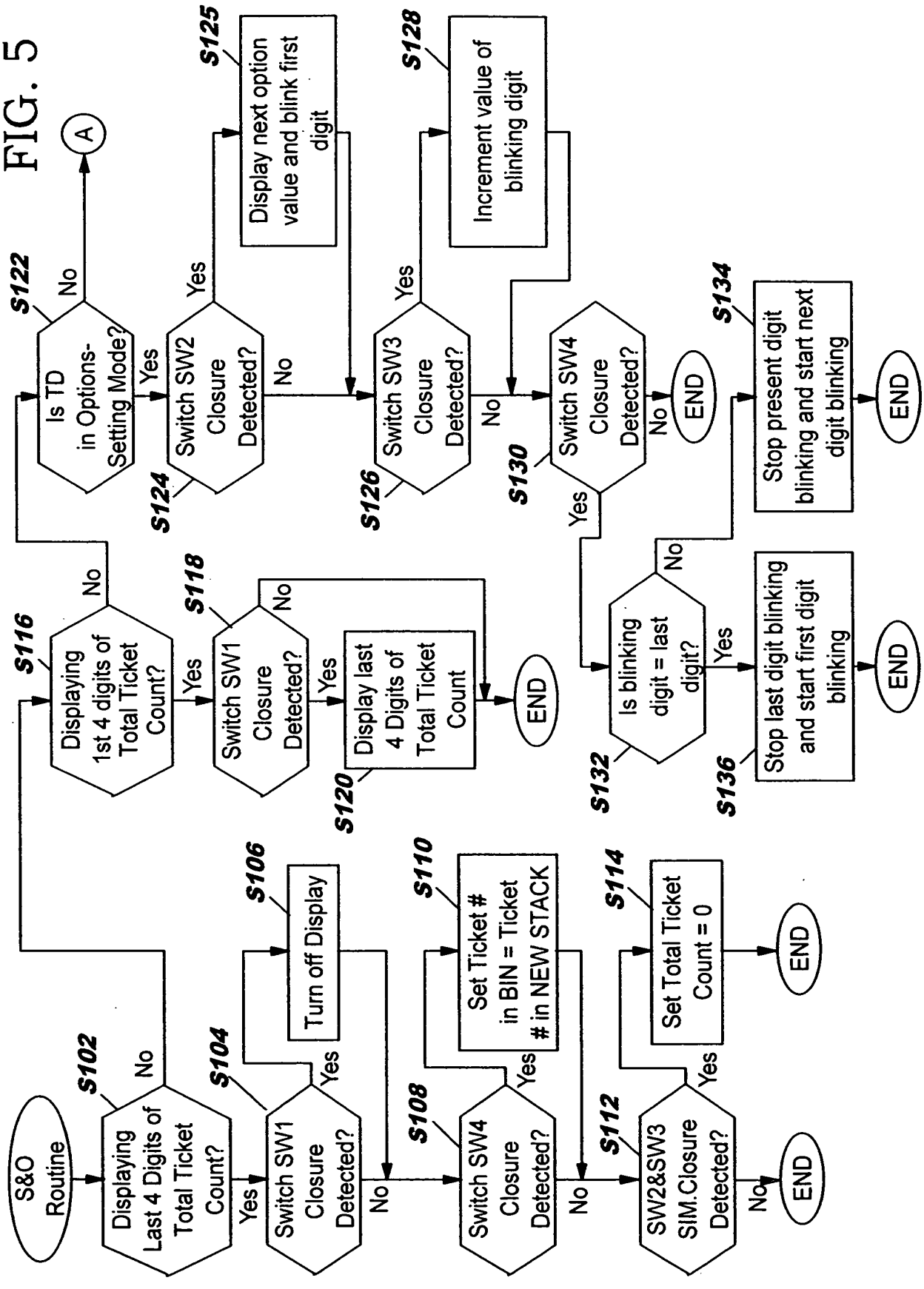

S&O Routine
S102
Displaying Last 4 Digits of Total Ticket Count?
No
Yes
S104
Switch SW1 Closure Detected?
Yes
S106
Turn off Display
No
S108
Switch SW4 Closure Detected?
Yes
S110
Set Ticket # in BIN = Ticket # in NEW STACK
No
S112
SW2&SW3 SIM.Closure Detected?
Yes
S114
Set Total Ticket Count = 0
No
END
END
END
S116
Displaying 1st 4 digits of Total Ticket Count?
No
Yes
S118
Switch SW1 Closure Detected?
No
Yes
S120
Display last 4 Digits of Total Ticket Count
END
S122
Is TD in Options-Setting Mode?
No
A
Yes
S124
Switch SW2 Closure Detected?
Yes
S125
Display next option value and blink first digit
No
S126
Switch SW3 Closure Detected?
Yes
S128
Increment value of blinking digit
No
S130
Switch SW4 Closure Detected?
No
END
Yes
S132
Is blinking digit = last digit?
No
Yes
S134
Stop present digit blinking and start next digit blinking
END
S136
Stop last digit blinking and start first digit blinking
END

FIG. 5A

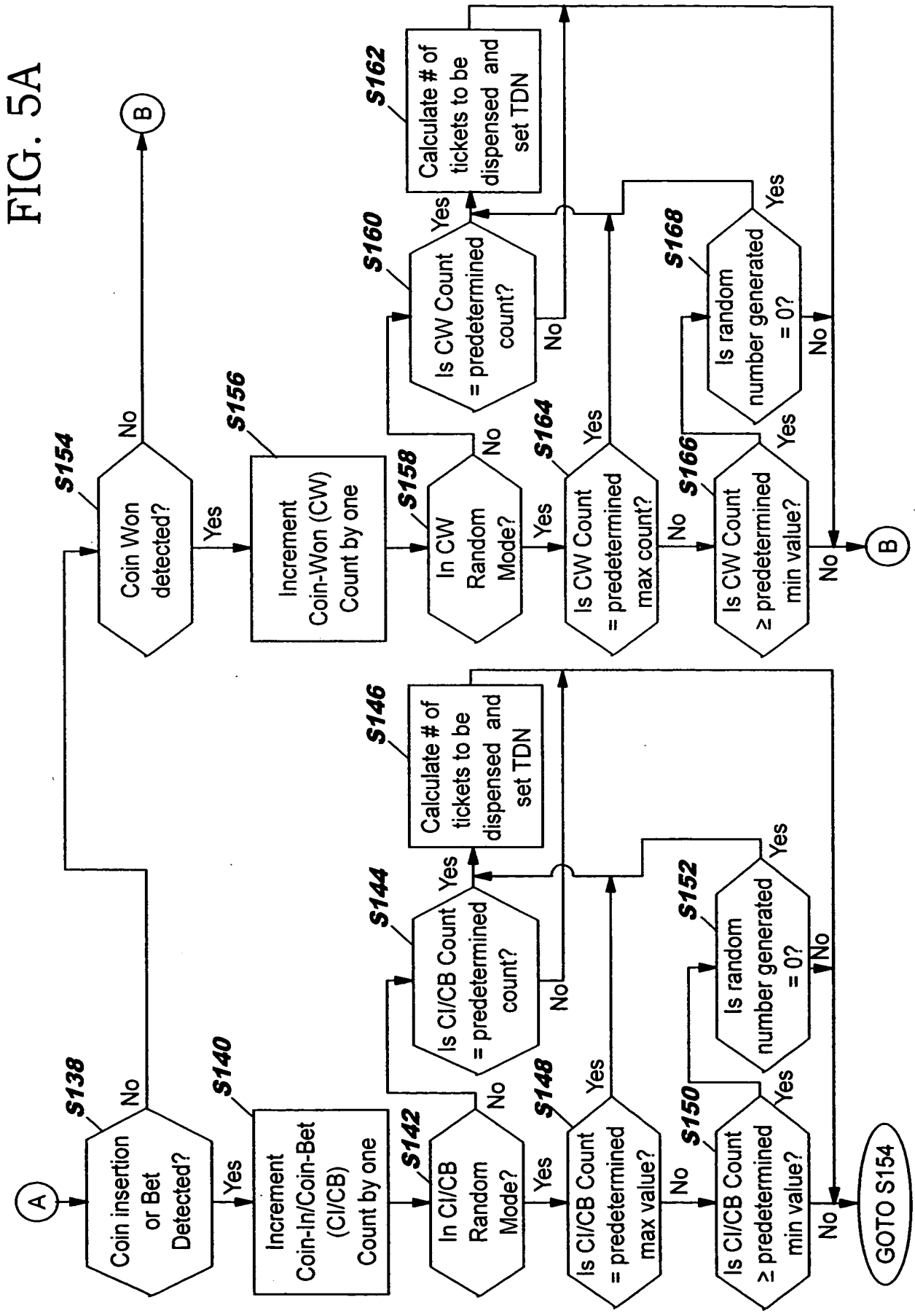

A
Coin insertion or Bet Detected?
S138
No
Yes
Increment Coin-In/Coin-Bet (CI/CB) Count by one
S140
In CI/CB Random Mode?
S142
No
Yes
Is CI/CB Count = predetermined max value?
S148
No
Yes
Is CI/CB Count ≥ predetermined min value?
S150
No
Yes
Is random number generated = 0?
S152
No
Yes
Is CI/CB Count = predetermined count?
S144
No
Yes
Calculate # of tickets to be dispensed and set TDN
S146
GOTO S154
Coin Won detected?
S154
No
Yes
B
Increment Coin-Won (CW) Count by one
S156
In CW Random Mode?
S158
No
Yes
Is CW Count = predetermined max count?
S164
No
Yes
Is CW Count ≥ predetermined min value?
S166
No
Yes
Is random number generated = 0?
S168
No
Yes
Is CW Count = predetermined count?
S160
No
Yes
Calculate # of tickets to be dispensed and set TDN
S162
B

FIG. 5B

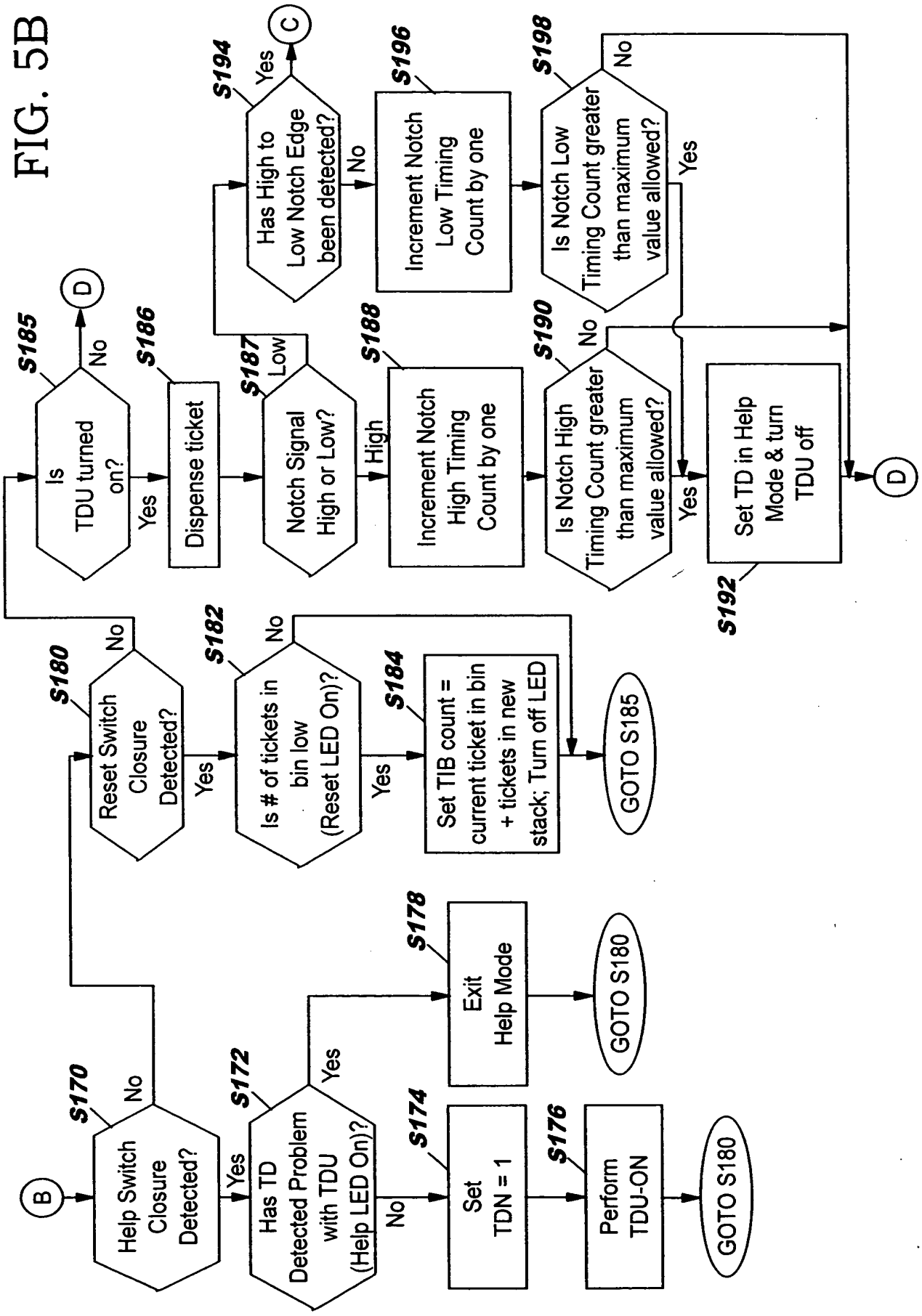

B
S170
Help Switch Closure Detected?
No
Yes
S172
Has TD Detected Problem with TDU (Help LED On)?
Yes
No
S178
Exit Help Mode
GOTO S180
S174
Set TDN = 1
S176
Perform TDU-ON
GOTO S180
S180
Reset Switch Closure Detected?
No
Yes
S182
Is # of tickets in bin low (Reset LED On)?
No
Yes
S184
Set TIB count = current ticket in bin + tickets in new stack; Turn off LED
GOTO S185
S185
Is TDU turned on?
No
Yes
D
S186
Dispense ticket
S187
Notch Signal High or Low?
Low
High
S188
Increment Notch High Timing Count by one
S190
Is Notch High Timing Count greater than maximum value allowed?
No
Yes
S192
Set TD in Help Mode & turn TDU off
D
S194
Has High to Low Notch Edge been detected?
Yes
C
No
S196
Increment Notch Low Timing Count by one
S198
Is Notch Low Timing Count greater than maximum value allowed?
No
Yes

FIG. 5C

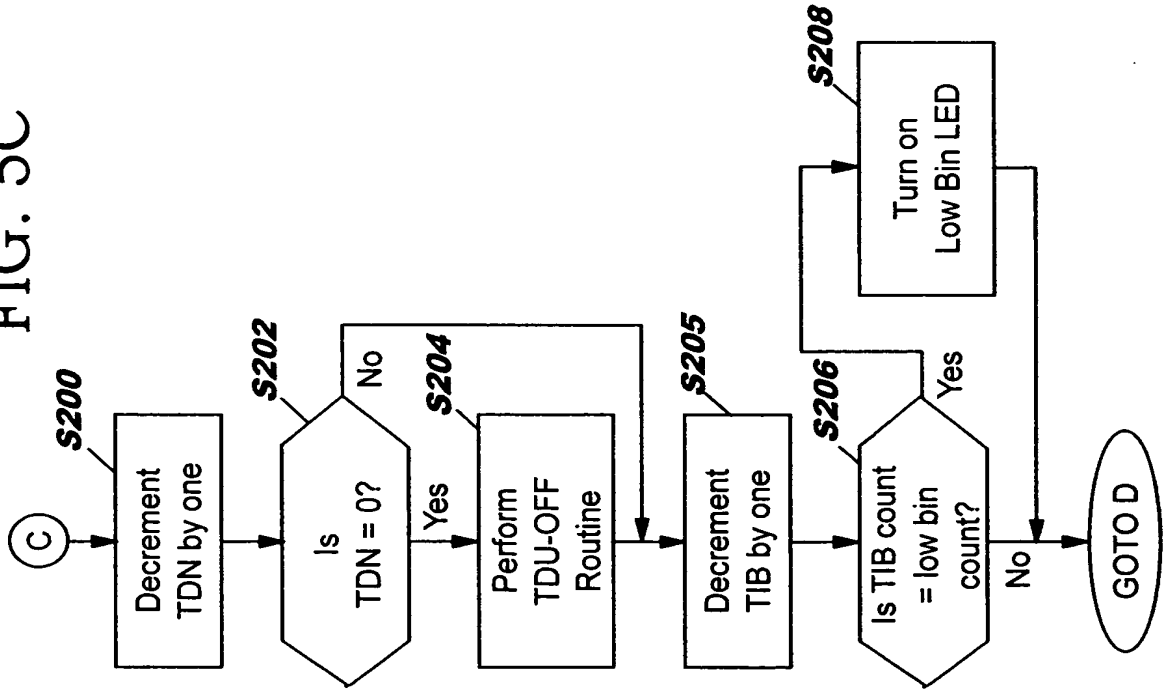

C
S200
Decrement TDN by one
S202
Is TDN = 0?
No
Yes
S204
Perform TDU-OFF Routine
S205
Decrement TIB by one
S206
Is TIB count = low bin count?
Yes
No
S208
Turn on Low Bin LED
GOTO D

FIG. 5D

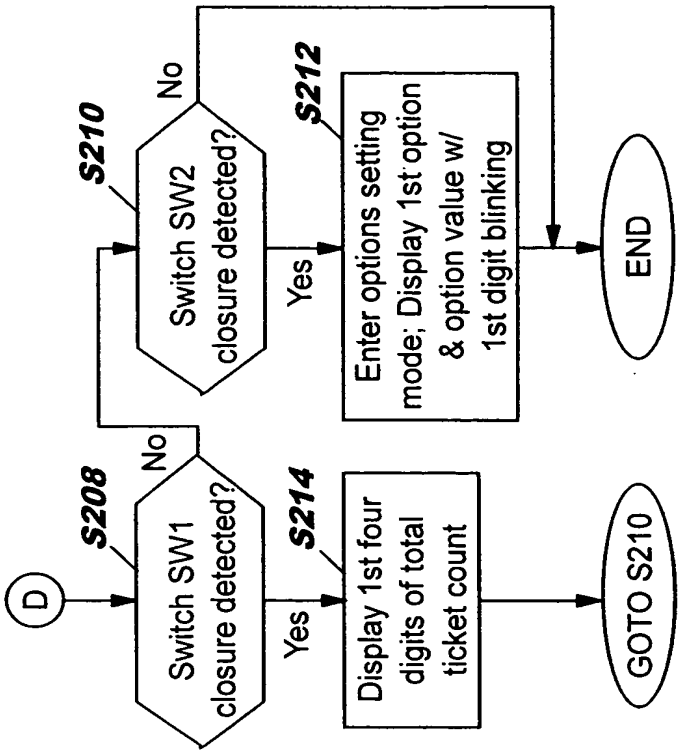

D
S208
Switch SW1 closure detected?
No
Yes
S214
Display 1st four digits of total ticket count
GOTO S210
S210
Switch SW2 closure detected?
No
Yes
S212
Enter options setting mode; Display 1st option & option value w/ 1st digit blinking
END

FIG. 6

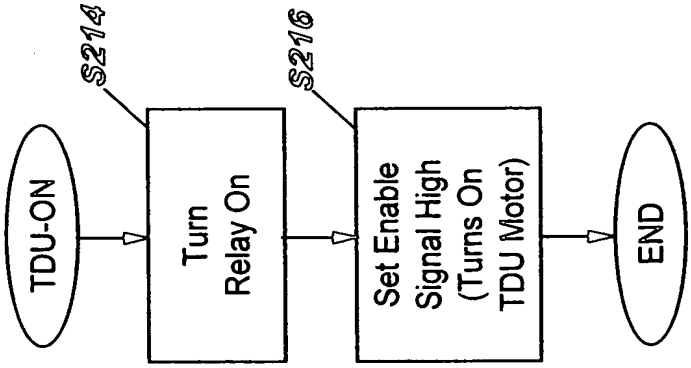

TDU-ON
S214
Turn
Relay On
S216
Set Enable
Signal High
(Turns On
TDU Motor)
END

FIG. 7

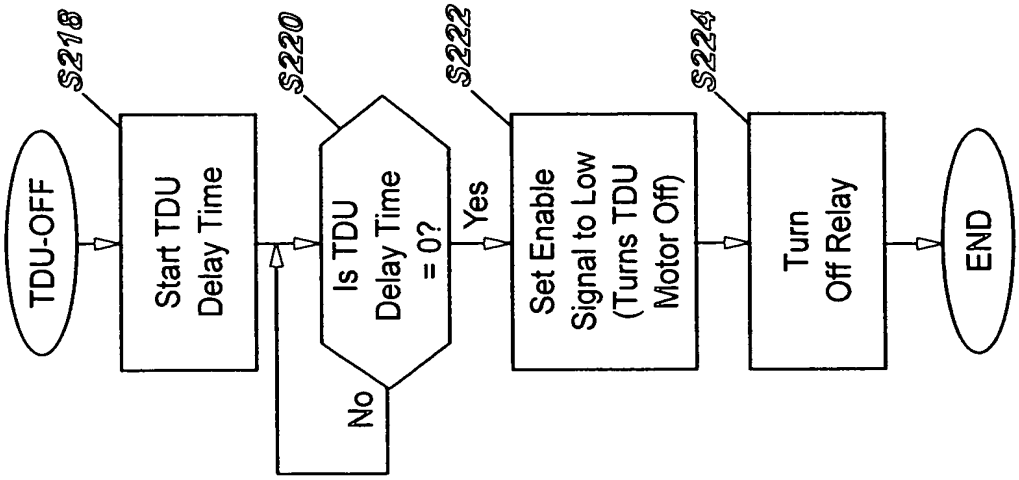
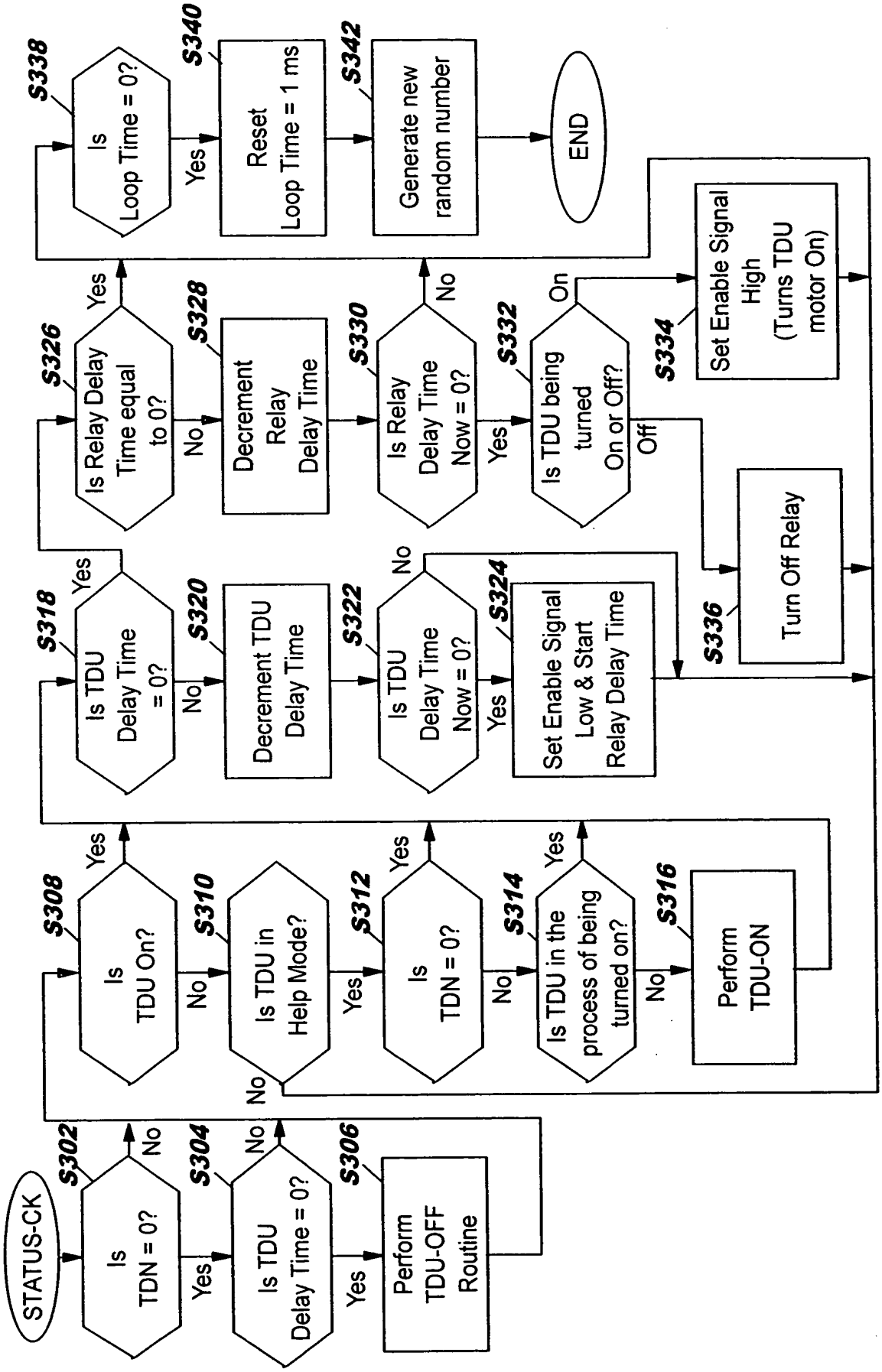

TDU-OFF
S218
Start TDU
Delay Time
S220
Is TDU
Delay Time
= 0?
No
Yes
S222
Set Enable
Signal to Low
(Turns TDU
Motor Off)
S224
Turn
Off Relay
END

FIG. 8


STATUS-CK
S302
Is TDN = 0?
Yes
No
S304
Is TDU Delay Time = 0?
Yes
No
S306
Perform TDU-OFF Routine
S308
Is TDU On?
Yes
No
S310
Is TDU in Help Mode?
Yes
No
S312
Is TDN = 0?
Yes
No
S314
Is TDU in the process of being turned on?
Yes
No
S316
Perform TDU-ON
S318
Is TDU Delay Time = 0?
Yes
No
S320
Decrement TDU Delay Time
S322
Is TDU Delay Time Now = 0?
Yes
No
S324
Set Enable Signal Low & Start Relay Delay Time
S326
Is Relay Delay Time equal to 0?
Yes
No
S328
Decrement Relay Delay Time
S330
Is Relay Delay Time Now = 0?
Yes
No
S332
Is TDU being turned On or Off?
On
Off
S334
Set Enable Signal High (Turns TDU motor On)
S336
Turn Off Relay
S338
Is Loop Time = 0?
Yes
S340
Reset Loop Time = 1 ms
S342
Generate new random number
END